Geel 2000 Language Schools

Science Department

Primary (5)

First term

(2023 – 2024)

Name………………………………………

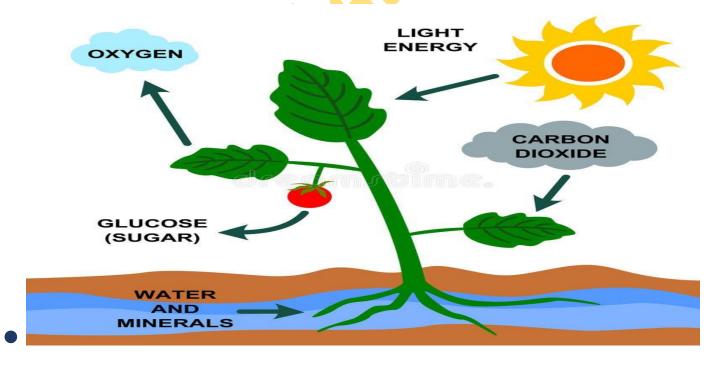
Class………………………………………

Geel 2000 Language Schools

Theme one: systems

Concept 1.1 Plant needs

Lesson (1)

- *A plant is a living organism, like a human being that goes through different stage of growth.*

- ***Needs of the plants to survive:***
- 1- water 2- Carbon dioxide from air
- 3-sunlight 4- nutrients from soil

-

Plants needs

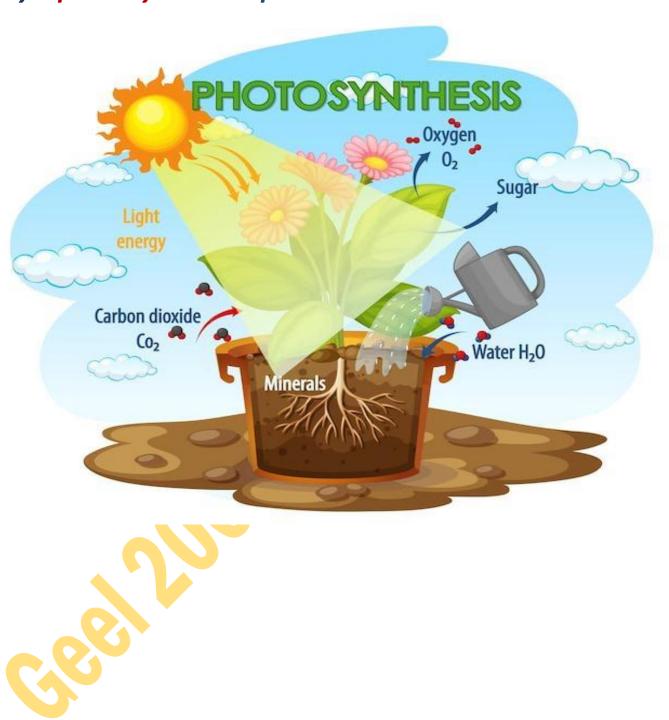
Basic need
- Sunlight
- Water
- Carbon dioxide gas

Not basic need
- Soil
- Sugar
- Oxygen gas

- ***Give reason some plants don't need soil as a basic need because:***

➢ ***1-Some plants only grow in the water.***

➢ ***2-Some plants grow on other plants instead of having roots in the soil.***

There are differences between human needs and plant needs to survive:

	Human Needs	Plant needs
Similarities	• The water • The air • The sunlight	• The water • The air • The sunlight
Differences	• He gets food from plants and animals. • He doesn't need carbon dioxide	• It can make its own food by itself. • It needs carbon dioxide to make food.

Plant and food

- *Plant makes its own food*
- *Its food is a type of sugar that provides the plant with energy to grow.*

- ***Plants make their food (sugar) in their leaves by "photosynthesis" process.***

PHOTOSYNTHESIS

Oxygen O_2

Sugar

Light energy

Carbon dioxide CO_2

Water H_2O

Minerals

Worksheet (1)

Q.1- Choose the correct answer:

1- All the following are plant basic needs to make its own food, except …………

a. Water. b. air. c. sunlight. d. rocks.

2- The ………..of plant get water and nutrients from the soil.

a. Root. b. stems. c. leaves. d. flowers.

3-Human and other animals need to eat to get………

a. Oxygen gas. b. energy. c. carbon dioxide gas. d. soil.

4-Water and nutrients are carried from the roots to the leaves through the ………

a. Stem b. soil c. fruits d. flowers

5- In photosynthesis process, plant produces…….. to get energy.

a. Oxygen gas. b. sugar. c. carbon dioxide. d. water.

Q.2-Write the scientific term of each of the following:

1. *A gas taken from the air by leaves to help the plant to make its own food.* *(……………)*
2. *A liquid substance that plants, animals and human need to survive.* *(……………)*
3. *The process by which plant can make its own food.* *(……………..)*
4. *The gas which is released from plants during photosynthesis.* *(……………)*

Q.3- Cross out the odd word:

1. *Carbon dioxide gas – water – oxygen gas – sunlight. (………….)*
2. *Roots- stem- leaves – sunlight. (……………………)*

Q.4- Choose from column (B) what suits it in column (a):

(A)	(B)
1.Sunlight 2.Soil 3.Water 4.Oxygen	a. is absorbed by the roots of the plant. b. is necessary for plant's growth. c. is not a basic need for plant growth. d. a gas which is produced during photosynthesis process. e. a gas which is the plant uses during photosynthesis process.

1-……. 2-…….. 3-……… 4-………

Lesson (2)

Do plants need soil?

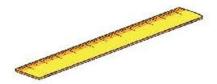
Experiment shows how plants grow in the light and in the dark.

❖ **Tools**

1. Plastic cup contain potting soil.

2. Paper towels.

3. Plastic plate.

3. Water

5. Metric ruler

Steps:

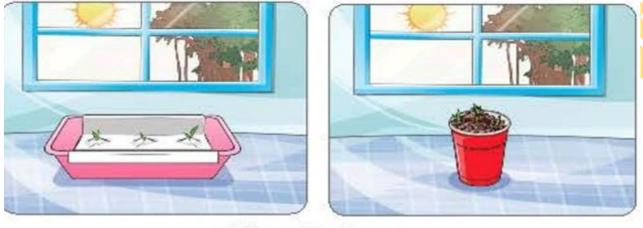
1- Germinate some seeds in a wet paper towel.

2- Place three seeds in the top half of the paper towel and fold the bottom half of the towel up so that it covers the seeds then, place the paper to towel inside the plastic plate.

3- Plant the other three seeds in the cup that contains potting soil then, water the seeds.

4- Place the plate and the cup in a place where they can get sunlight.

5- Check the growth of seeds over the next several days. Wet the paper towel and water the soil as needed.

6- Measure the growth of each seed using the metric ruler.

Observations:

- *The growth of the seeds placed in the paper towel is similar to that of the seeds planted in the soil*

After 7 days

- *The seeds grown without soil would not grow as quickly as the seeds in the soil.*

❖ *Conclusions*

- *The seeds can grow without soil if they water and sun.*
- *Plants can grow without soil for a while, but finally they need soil.*

After 14 days

Note :

Germination: **means that the plant sprouts and begins to grow from a seed.**

Hydroponic system: *a place full of water that contains minerals to grow plants .*

Worksheet (2)

Q.1 Look at the opposite figure, then choose the correct answer:

a-This process is called……….

(Germination – photosynthesis – respiration)

b- Seeds of plant will need ………………… to complete its growth after many days.

(Soil – water – insects)

Q.2 Look at the following figures then, complete the following sentences :

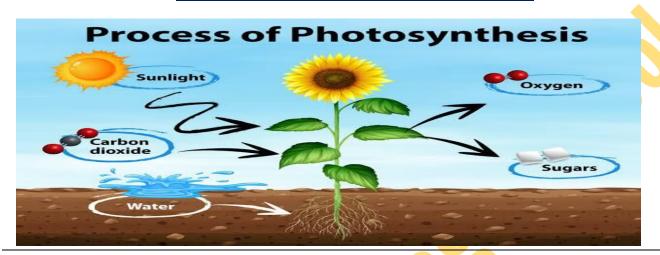



Figure (A) *Figure (B)*

1- The seeds in ………..grow faster than those in ……….

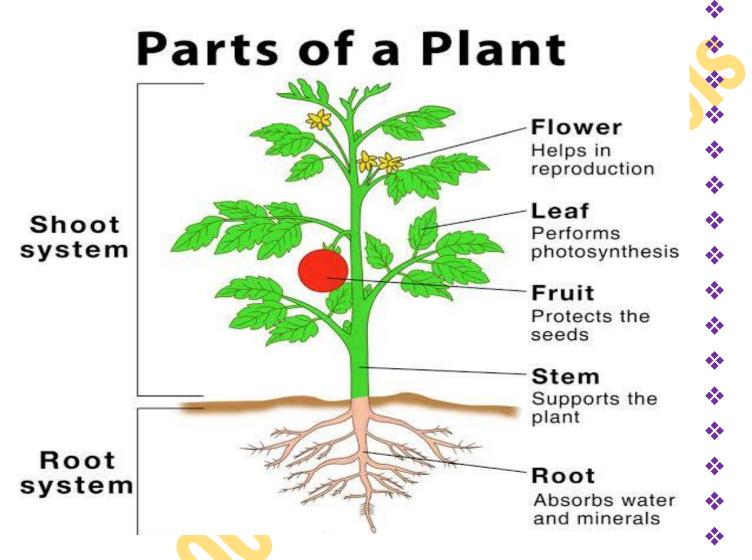
2- Seeds in figure (b) should be transferred into ………. to complete its growth.

Lesson (3)

Photosynthesis process

- ***Photosynthesis process:***

  It is the process in which plants use the energy in sunlight to make their own food.

- ***The plant needs :***
  1. ***Sunlight (sun)***
  2. ***Carbon dioxide gas (air)***
  3. ***Water and salts (soil)***

The plant products :

1. ***Oxygen***

2. *Nutrients (sugar , starch , fats , and protein)*

Parts of a Plant

Shoot system

Root system

Flower
Helps in reproduction

Leaf
Performs photosynthesis

Fruit
Protects the seeds

Stem
Supports the plant

Root
Absorbs water and minerals

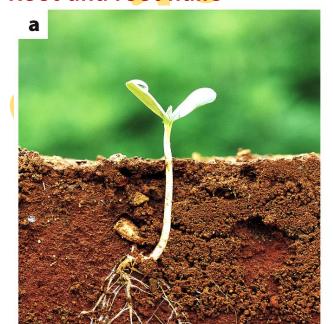
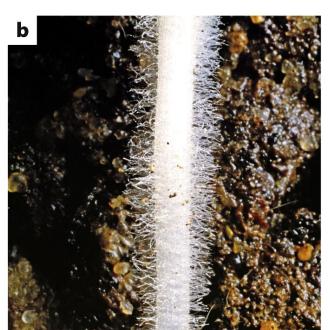
The structure of plants

1. Leaves:

1. **They make food for the plant by photosynthesis process.**
2. **They contain chlorophyll which gives them their green color.**
3. **they collect sunlight and get energy from it**

The air enters the leaves through the <u>stomata</u>

Stomata:

They are pores that allow air to move into the leaves.

2. Stem :

1. They transport water and nutrients from the root to the leaves through tubes called xylem.
2. They supports leaves and flowers of the plant.

3. Roots:

1. They absorb water and nutrients from the soil .
2. They fix (anchor) the plant in the soil.
3. Roots contain root hairs : to absorb more water and nutrients

Root and root hairs

Xylem	Phloem
1. Transfer water and nutrient from roots to other plant's part.	1. Transport food from leaves to the other parts of the plant.

The Phloem carries food made by the leaves to all sections of the tree.

Xylem tubes carry water and minerals upwards from the roots.

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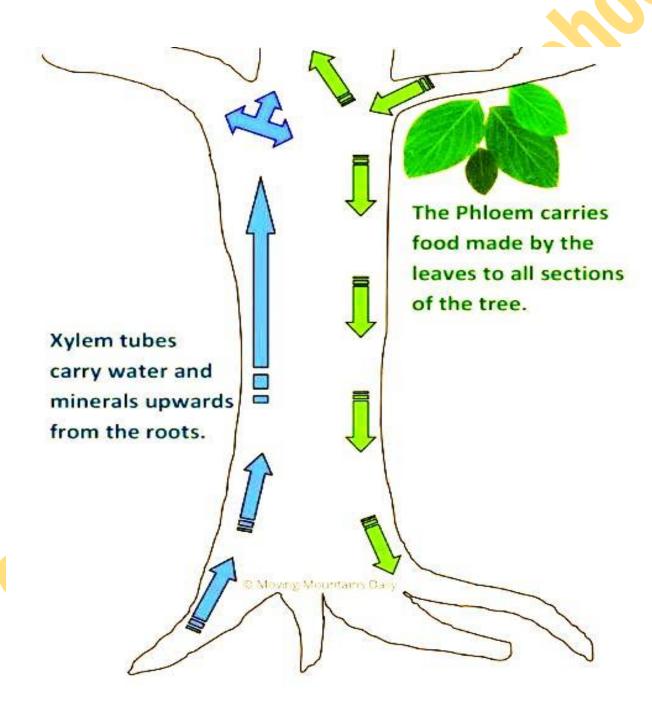

Worksheet (3)

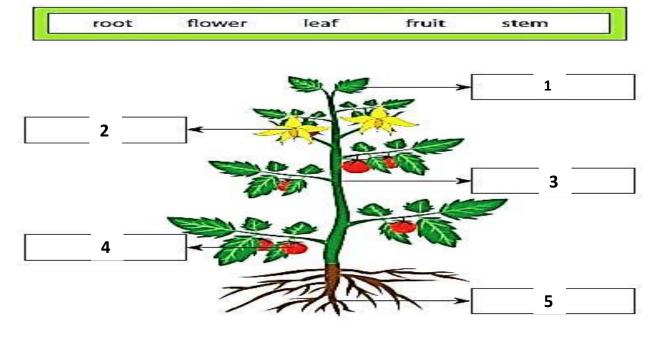
Q.1: Write the odd word

1. (leaves , stem , eyes , root) (…………….)
2. (air , sunlight , water , vegetables) (…………….)
3. (stem , flower , oxygen , roots) (…………….)

Q.2: Put true or false

1. Without sunlight the green plant will die quickly. ( )
2. The plant that left in the dark has green leaves. ( )
3. The plant needs water only to grow up. ( )
4. Photosynthesis process is so important for plants. ( )
5. Leaves and stem only are the structure of the plant. ( )
6. The air enters the leaf from xylem. ( )
7. Stomata is a tiny opening inside the leaf. ( )
8. Plant's roots absorb water and nutrients from the soil and transport it to the other parts of the plant. ( )

Q.3: Write the scientific term

1. It is the process through which plants use the energy in sunlight to make their own food. (……………………………)
2. The plant needs that comes from the sun (…………………)
3. Part of the plant that collect sunlight (………………)
4. The air enters the leaf from it (…………………)
5. Small opining in leaves (…………………)
6. Vessels in the stem of plants connect the stem with leaves (…………………)

Q.4: Write the definition Of the following:

1. **Photosynthesis process:**

………

2. **Stomata**

………

3. **Xylem**

………

Q.5: Complete the following:

1. (……………………)   2. (……………………)

3. (……………………)   4. (……………………)

5. (……………………)

Lesson (4)

Parts of plants

- **There are many forms of stems.**

1. **Wood stem such as tree trunks and shrubs.**

2. **Upright stems such as most of flower.**

3. **Climb stem such as vines (grapes).**

4. **Tubers that stem extend underground such as potato plant.**

5. **Runners** *that stem extend above and along the ground such as strawberry*

There are two kinds of leaves:

1. ***Narrow leaves**: that look like needles, such as pine trees.*

2. *Flat, wide leaves.*

- ***Give a reason for:***

The life on Earth without plants would be impossible?

Because during photosynthesis process plants produce oxygen gas that animals and people need to breathe.

Worksheet (4)

Q.1 Complete :

1. Human and animals depend on plants as a source of ………....

2. Plants absorb…………., and ………….to make its food

3. Nutrients and water move up through the stem of the plant through the vessels called……….

4. Plants need………..energy to make food.

5…………….. is one of the important functions of the roots.

6. The stem of most flowers is…………………

7. The stem of the plants that extend under the ground is called……………………

8. Pine tree leaves are…………………..

Q.2 Put (true) or (false):

1. *Plant leaves contain openings. (   )*
2. *Tubers extend on the ground and help in the formation of new plants.   (*
3. *The photosynthesis process occurs inside the leaves of plants (   )*
4. *The roots make the food for the plant. (   )*
5. *Without plants, life on earth is impossible. (   )*
6. *Xylem and phloem differ in plant functions. (   )*
7. *Sunlight is the necessary source of energy for plants to make their own food. (   )*

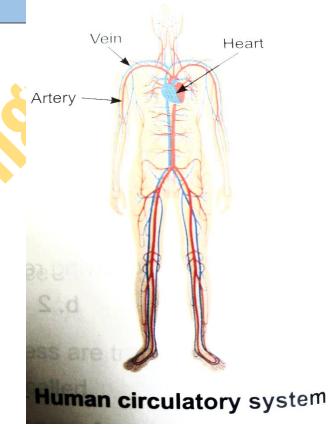
Lesson (5)

Comparing plant and human systems

The human circulatory system consists of:

The heart and blood vessels (arteries and veins).

A

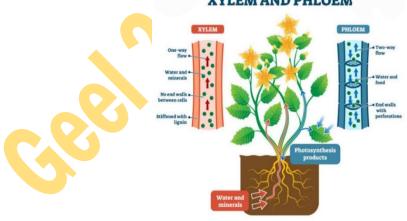
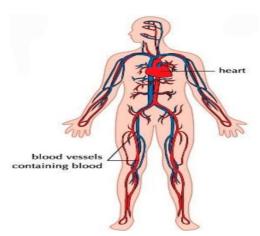
Circulatory system:

It is the system that transports blood and other fluids throughout the body.

Human circulatory system

Arteries:

Carry blood that is rich with oxygen and nutrients (glucose) from the heart to the body cells so that the body can grow.

Veins:

Return the blood that carries carbon dioxide and is low in nutrients and oxygen back to the heart, then to the lungs where the blood carries oxygen again.

	Plant transport system	Human circulatory system
Similarities	• Both have system of vessels to transport water, nutrients and gases. • Both have one- way vessels.	
Differences	consists of : • Xylem tubes carry water and nutrients from the roots to the leaves. • Phloem tubes carry sugars from the leaves to all plant parts.	-it consists of : • Arteries carry blood rich with oxygen and nutrients (glucose) from the heart to all body parts. • Veins carry blood that contains carbon dioxide from all body parts back to the heart.

Plant food

- ❖ *During photosynthesis process, light energy of the sun is transformed into chemical energy that is found in glucose.*

  During photosynthesis process, the plant also produces oxygen and water which are released into the air.
- ❖ *Flowers are the reproductive parts of many plants.*

Flowers and seeds

Plant reproduction:

It is the process of making new plants.

Function of the plant's flowers:

- ➢ *Flowers produce seeds for the plant that help the plant to reproduce.*
- ➢ *When seeds receive air, water and the correct temperature, they can grow into a new plant.*

Worksheets (5)

Q1- Complete the following sentences:

1. Plants make their energy in the form of……….sugar during photosynthesis process.

2. Air enters plants through stomata on their…… while it enters the human body through………. and……….

3. Human circulatory system consists of ……….. and……….

4. Arteries carry blood rich in……….and oxygen from the heart to……….

5. The blood and other fluids are transported throughout the body by the………..system.

6. The plant makes sugar in its………….. during photosynthesis process.

7. Transport system in the plant consists of two types of vessels which are………..and………

8. Arteries carry oxygen and nutrients from the ……………… to all body parts, while………in plant's stem carry water from the………. to the leaves.

9. In plant's leaves,………. energy is converted into……... energy during photosynthesis process.

10. Flowers of the plant produce………… that help it to…………

11. There are two types of vessels in the human circulatory system which are………. And……..

Q.2- Give reasons for:

1. Flowers are important parts for the plant.

____

____

2. Circulatory system has an important role for human to survive.

____

____

3. Xylem in plant is a one-way vessel.

____

____

Lesson (6)

Seed dispersal

It is a process that seeds are transported from one place to another.

- *Ways of seed dispersal in nature:*

1. *Floating on water or rivers or lakes.*
2. *Traveling by wind.*
3. *Sticking to animal's fur or human clothes.*
4. *Being eaten by animals and comes out with their stool.*

Examples:

▸ Look at the following seeds in the pictures below, then [illegible] think the seeds in the pictures move from one place to [illegible]

Coconut seed

Maple seeds

Burdock seeds

Apple seeds

Dandelion seeds

Ways of seeds dispersal	*Seeds*
Floating on water	*Coconut seed*
Traveling by wind	*Maple seeds- dandelion seeds (both of them are light seeds)*
Sticking to animal fur	*Burdock seeds (have spines)*
Being eaten by animals	*Tomato seeds- apple seeds*

Concept (1.2)

Lesson (1)

Ecosystem:

It is an area (or community) that includes living organisms and non- living things that interact with each other.

Living organisms as: *plants, animals and humans*

Non-living things as: *air soil and water*

Example of ecosystem: ***as ocean, a rainforest, a desert or a sea***

The interaction that present in an ecosystem occurs between animals and plants only and not between all the components.

How does energy flow through an ecosystem?

Energy flow through an ecosystem from plants to animals and between animals when they eat each other, then when living organisms die, their energy is returned to the soil.

Hawks in ecosystem

Important notes for Hawks

- ***Hawks get energy from food.***
- ***Hawks eat different types of animals such as, snakes, mice, fish, birds, squirrels, rabbits and other small ground animals.***
- ***Hawks do not eat plants, but they eat animals who eat plants, so they also depend on plants for energy.***

There are few predators that can attack hawks such as eagles or other hawks.

- ***When a hawk dies, it decomposes and its energy is returned to the soil.***

Energy Flow in Ecosystems

A healthy ecosystem is a community that provides food, water and shelter to all living organisms that live in it.

What are the type of food that living organism depends on :

1-Caracal feed on rat (mice)	*2-Rabbit feed on grass*	*rd feed on worm or tterflies*

- *There is a relationship between sunlight and energy that we get from the food.*
- *Sun is the main source of energy in all ecosystem.*
- *Animals need energy that comes from eating plants and other animals, as they cannot produce their own food.*

Give reason : sun is the main source of energy in all ecosystem.

-The light energy which comes from the sun is converted into chemical energy in a form of food that humans and animals eat to get energy .

- ***Food is energy***

✶Human gets energy during the day from

- The food we eat
- The oxygen we breathe

Sun is the primary source of energy for all organisms

Plants	Animals
During photosynthesis process, the sunlight converts carbon dioxide and water into glucose inside the plant leaves. Note: Carbon dioxide :is a gas present in air and necessary for the formation of plant food.	✶Animals including humans cannot make their own food ✶They get energy from the environment in which they live. ✶Different animals can get their Food by: Eating plants only. Eating other animals that eat plants. Eating both plants and animals.

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Worksheet (1)

Q.1 Write the scientific term of each of the following:

1. A community that contains living organisms and nonliving things.

(…………………………)

2. The process that takes place inside plants through which we can get oxygen.

(…………………………)

3. It is a form of energy that the plant need during

Photosynthesis process. (…………………………)

4.It is the primary source of energy for all living organisms on the Earth.

(…………………………)

5. A type of living organisms that can produce its own food by

Absorbing sunlight. (…………………………)

6. The sugar that is formed inside plants during photosynthesis

Process. (…………………………)

7. The gas that is present in air and necessary for the formation of plant food.

(…………………………)

8. The gas that is produced from photosynthesis process.

(…………………………)

9. Living organisms that both humans and animals need to

Survive. (…………………………)

Q.2 Give reasons for:

1. Human needs to eat some animals and plants

……………………………………………………………………………….

Lesson (2)

Food chains:

- Living organisms eat food to get the energy to survive.
- Living organisms feed on other organisms, so energy passes between them.
- Living organisms are classified into three groups according to their way of feeding, which are:

(1) Producers.

(2) Consumers.

(3) Decomposers.

1. Producers:

They are a group of living organisms that can make their own food .

🖶Nearly all of the producers on the Earth are plants.

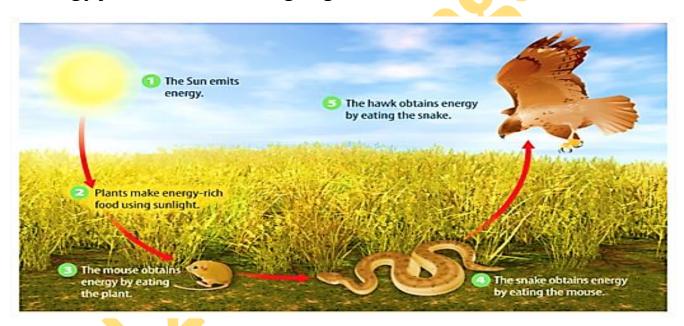
2. Consumers :

They are living organisms that eat other organisms to get energy .

Primary Consumers	***Secondary consumers***	***Tertiary consumers***
They are animals that eat plants such as many insects .	***They are animals that eat the primary consumers like birds are secondary consumers, because they eat insects and other organisms that eat plants.***	***They are animals that eat the secondary consumers like large meat-eating animals like crocodiles.***

3. Decomposers

They are organisms that carry out the process of decomposition by breaking down or decaying dead organisms.

Examples: fungi, bacteria, worms and millipedes

Give reason : worms and millipedes are considered as decomposers .

- *Because they eat dead matter and produce wastes which increase the soil fertility .*

➤***Decomposition:*** *it is the process through which decomposers can recycle nutrients into the soil.*

● *Food chain*

It is a model that shows one linear set of feeding relationships and energy flow between living organisms.

This figure shows the recycling nutrients back into the soil

- **The first link in the food chain is plant (producer).**

Because it uses the energy from the Sun to produce its own food.

- **The second link in the food chain is mouse (primary consumer).**

Because it eats plant,

- **🖶The snake is considered as a (secondary consumer).**

Because it eats mouse,

- **Then the eagle is considered as a tertiary consumer.**
  Because it eats snake.
- **In the final the eagle dies, it decomposes by decomposers and its energy is returned to the soil which makes the food chain continuity.**

•*Predator and prey*

In the previous food chain, we can observe that

✶The hawk and snake are "Predators", because they hunt other animals.

✶The snake and the mouse are "Preys", because they are hunted by other animals for food.

So, both predators and preys pass food and energy through the food chain.

Prey:

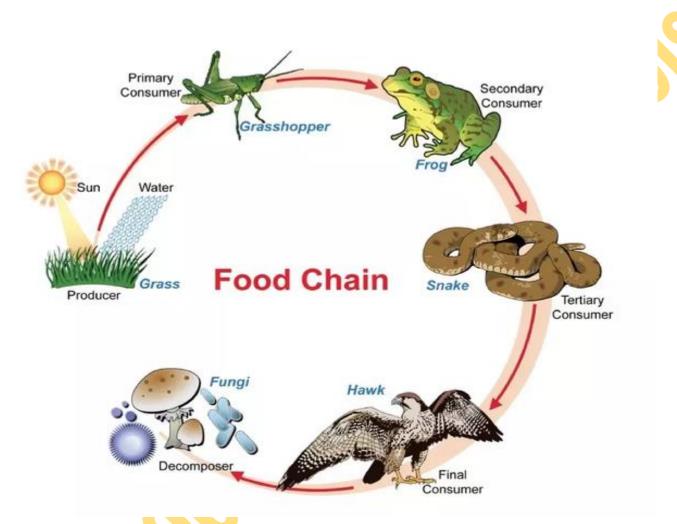
Is any animal that is hunted and eaten by another animal.

"Predator

Is any consumer that hunts and eats another animal .

Worksheet (2)

Complete the following sentences:

1. Living organisms include……………. , Consumers and decomposers.
2. Producers can make………………Sugar which is rich in energy through…………. process.
3. Decomposers and ………………….. depend on producers to get their energy.
4. The most common producers are……………

5. The light energy of the Sun cannot flow directly to consumers and……………….
6. In a food chain, the energy flows from…………… Consumer to a secondary consumer
7. Decomposers are responsible for …… .. nutrients to the soil, that are needed for plants growth.

2- What happens if .?

1. All primary consumers disappear from a certain food chain.

……

……

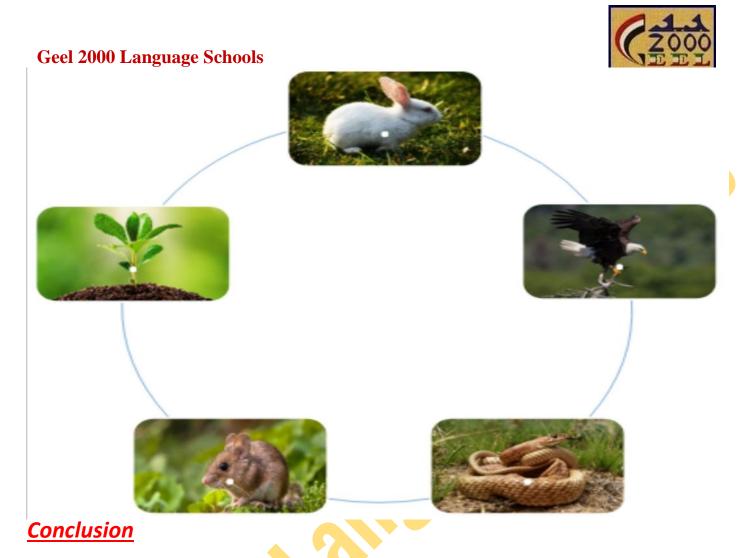
2.All types of decomposers are absent from an ecosystem.

……

……

Lesson (3)

• FOOD CHAIN

• FOOD WEB:

- It is a model that shows many different feeding relationships among living organisms
- The ways in which many food chains interact within an ecosystem form a food web.

Worksheet (3)

1 Choose the correct answer

1. All the following are types of food for primary consumers, except

a. grasses. b. seeds. c. fruits. d. eagles.

2. A hawk can eat……………. when snakes are completely disappear from an ecosystem.

a. grasses b. grasshoppers c. birds d. leaves

3. It is better for any predator to depend on…………………………to get its energy and survive.

a. one species of consumers only b. many species of consumers

c. one species of decomposers only d. many species of decomposers

4. All types of plants are similar in all the following characters, except they……………………………………

a. are able to make photosynthesis process. b. are eaten by primary consumers.

C. can feed on predators. d. live in different types of ecosystems

5. Human is a …………………… living organism.

a. producer b. consumer c. decomposer d. predator

6. Secondary consumers can eat only………………

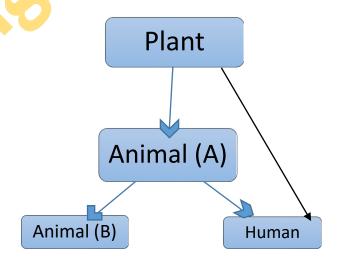
a. decomposers. b. producers.

c. Primary consumers. d. tertiary consumers.

Conclusion

- ***Food web is a model that describes energy flow and feeding interactions between living organisms in an ecosystem.***
- ***Food webs show that different organisms in an ecosystem are connected to allow energy to pass between them to survive, where:***
- ***Producers are eaten by some consumers.***
- ***Some consumers are eaten by other consumers.***
- ***Some consumers may eat the same producer or prey.***

Worksheet (4)

1.Complete the following sentences using the words below:

(Primary consumers - food web - food)

1. We cannot make a food web, if we don't know the types of…………. that the animals eat.
2. The interconnected food chains are known as…………….
3. An eagle can eat rabbits and mice, which are considered as…………..

2. Study the opposite food web, then choose the correct answer:

1. This food web starts with

Which are producers.

a. human

b. plant

c. animal (A)

d. animal (B)

2. Human can get energy from……….

a. plant and animal (B).

b. animal (A) only.

c. plant only.

d. plant and animal (A).

3. Energy cannot flow directly from the producer to………………

a. human and animal (A).   b. human and animal (B).

C. animal (B) only.   d. animal (A) only.

4. The living organism that gets energy directly and indirectly from the producer, Is……………………….

a. animal (A). *b. animal (B).*

c. plant. *d. human.*

5…………….is considered as a primary and a secondary consumer at the same time.

a. Plant *b. Human*

c. Animal (A) *d. Animal (B)*

Q3.Study the Following figure, then choose the correct answer below

sun *Plant* *Grasshopper* *Frog* *Snake*

Which of the following, is necessary for survival of all living organisms?.......

a. Plant. *b. The Sun.* *c. Grasshopper.* *d. Snake.*

Concept 1.3 Change in food webs:

Lesson (1)

The ecosystem affected by:

1- **Pollution.**
2- **Climate changes.**
3- **Human activities.**

Pollution: **it is the harms happen to air, water and soil due to human activities.**

The effects of environmental changes on the food web?

1- The disappearance of producer: make consumers migrate to search for food.

2- The presence of a large number of one type of organism: make their Food disappear.

Protection of the ecosystem:

Protection the marine environment in Palau Island:

Control the human activities on land by:

1- Avoid water pollution (when throwing waste materials in ocean.

2- Prevent overfishing (catching many fish from rivers, seas and ocean.

Note:

-Fishermen mustn't overfish coral reefs to conserve marine environment .

-If an ecosystem changes the food webs will change.

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➢The relation between all the components of an ecosystem for keeping the ecosystem balanced

-If there is a gentle rain in the desert ➡ the desert ecosystem may be improved (*Give reason*)

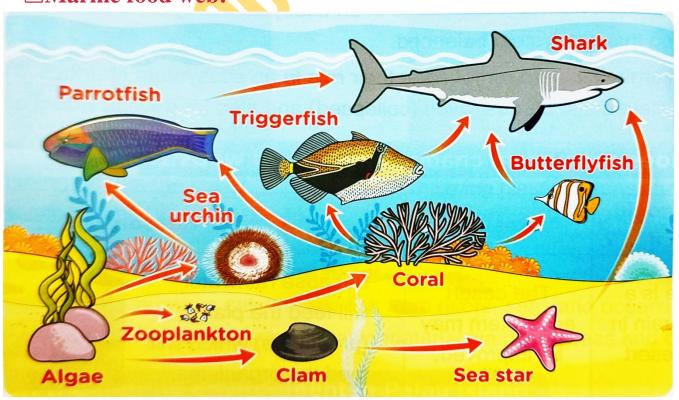
Because rainwater will feed the plants.

-If There is a heavy rain in the desert ➡the desert ecosystem may be harmed.

(*Give reason*)

Because the water of heavy rain will cause flooding.

-If there is a drought and all the grass dies ➡ the food web in the ecosystem may be destroyed. (G.R)

Because the plants will die and also the organisms will die.

- If there are many top predators in the food web ➡ the other organisms in the food web like lions, tigers and sharks may be harmed. (Give reason)

because the top predators will eat all the organisms.

NOTE:

-THE SUN PROVIDES THE EARTH WITH LIGHT AND WARM .

🖶Marine food web:

- **Algae ➡ clam ➡ sea star ➡ shark**
- **Algae ➡ zooplankton ➡ coral ➡ butterfly fish ➡ shark**
- **Algae ➡ zooplankton ➡ coral ➡ tiger fish ➡ shark**
- **Algae ➡ zooplankton ➡ coral ➡ parrot fish ➡ shark**
- **Algae ➡ sea urchin ➡ parrot fish ➡ shark**

Worksheet (1)

1-Choose the correct answer:

1- On extreme hot climate, the water of a lake ….

a. Increases due to evaporation.
b. Decreases due to evaporation.
c. Changes into ice.
d. Has a lower temperature.

2- All the following are human activities that affect a marine ecosystem, except……..

a. Flooding.
b. Throwing human wastes.
c. Overfishing.
d. Throwing plastic garbage.

3-All the following are top predators, except ……….

a. Hawks.
b. Tigers.
c. Butterfly fish.
d. Lions.

4-The marine food web usually starts with……….

a. Clam
b. Algae.
c. Zooplankton.
d. Parrotfish.

5-If clam are completely removed from a marine ecosystem, the survival of ………… May be affected.

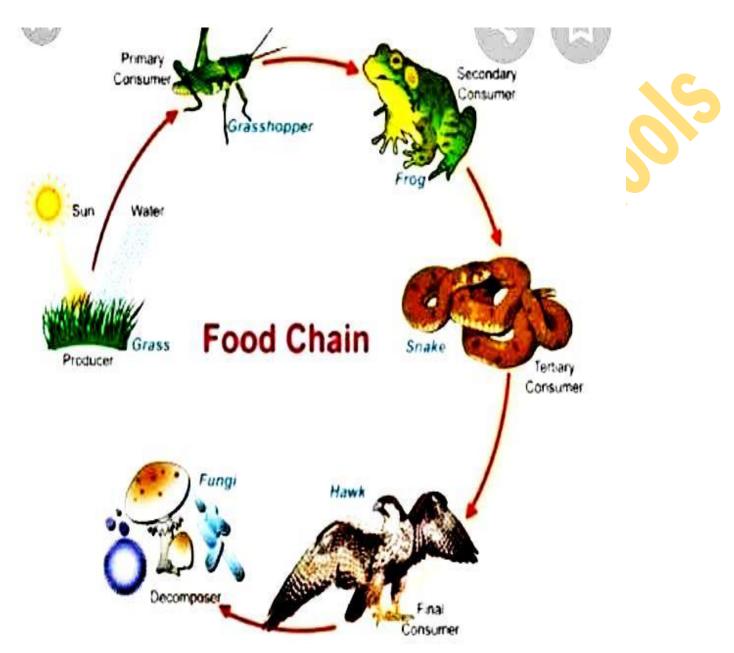
a. Tiger fish
b. Sharks
c. Sea urchin
d. Sea stars

Put (✓) or (x) :

1-Overfishing is one of the climate changes that affects the marine ecosystem. ( )

2-zooplankton can make their own food by photosynthesis process. ( )

3-if we introduce a new predator to an ecosystem , this ecosystem will be affected . ( )

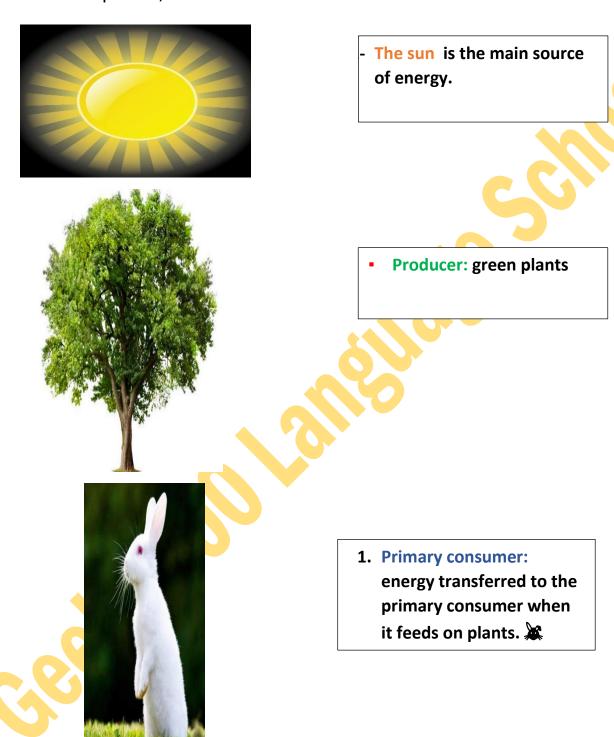
What happens if…?

1- Throwing big amounts of plastic garbage and waste materials in water.

……………………………………………,……………………………………………………………………………

……….

Energy flow

- **Energy can't be created or destroyed but it transfers.**
- **The first source of energy is the sun, then energy transfers to plants (producer), then transfers to (consumers) that when they die the (decomposers) convert them into simple substances and return the energy back to the soil.**

Primary Consumer
Grasshopper
Secondary Consumer
Frog
Sun
Water
Grass
Producer
Food Chain
Snake
Tertiary Consumer
Fungi
Hawk
Decomposer
Final Consumer

Desert food web:

➢ The sun transfers energy to producers until it reaches the decomposers, as follows:

- **The sun is the main source of energy.**

- **Producer: green plants**

1. **Primary consumer:** **energy transferred to the primary consumer when it feeds on plants.**

❖ **Secondary consumer:** energy transferred to the secondary consumer when it feeds on primary consumer.

1. **Decomposer :** gets energy from decomposing the bodies of dead organism.

➢ The energy in the overall system remains as the same .

➢ Energy is transferred between living organisms, most of the energy is recycled by decomposers back into the ecosystem .

Worksheet (2)

➢**Write the scientific term of each of the following :**

1. They are consumers which feed on secondary consumers. (   )
2. They are living organisms that include bacteria and fungi, which return energy back to the soil.   (   )

➢**Complete the following sentences:**

1- Predators of living organisms may be ……… for other living organisms.

2- A predator gets …………………… From the prey which feeds on.

➢**Put (✓) or (x) and correct the wrong answer:**

1) The energy in an ecosystem change by time . (   )
2) The soil fertility depends on decomposers.   (   )
3) The sun produces energy that decomposers use to make their food. (   )

➢**Choose the correct answer:**

1) Decomposers play an important role in returning the energy back to all the following, except …………………

A) the air

B) The soil

C) The water

D) The decomposers

2) In a food chain, the energy transfer …………..

A) From a predator to a prey.

B) From a prey to a predator.

C) From a predator to a producer.

D) From a consumer to a predator.

3) It is better for a predator in a food web, to have ………….

A) Only one type of decomposers.

B) More than one type of decomposers.

C) Only one type of prey.

D) More than one type of p

Lesson (2)

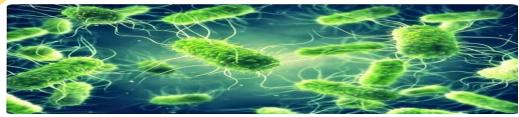
Population

❖ **Population: it is the number of organisms of one type of species living in an area.**

❖ **Factors affect the population:**

✓**increasing or decreasing the amount of water.**
✓**increasing or decreasing the temperature.**
✓**Climate change.**

❖ We know that all species depend on other species for survival, so an increase or decrease in one species affect the population causing **population change.**

❖ **Example**:

Microorganisms (producer) ➞ small fish ➡ seabirds

✶**Seabirds feed on small fish, the small fish feed on microorganisms that float on the surface of the sea.**
✶**Seabirds build their nests on the topof mountain cliffs.**

Note:

✓**Microorganisms:**

🖶**They are too small organisms that can't be seen by eyes.**

🖶 **They are producers in the marine food web.**

🖶**They make their own food and live in cold water habitats.**

➢If water temperature increase, microorganisms will move search for colder water then small fish search for microorganisms that lead to death of sea birds.

Worksheet (2)

Give reasons for:

If the temperature of water increase the sea birds will die.

…………………………………………………………………………………

Write the scientific term of each of the following:

1-They are organisms that are too small for people to see with only their eyes . ((………………………..)

2-It is the number of organisms of one type of species live in an area. (   )

Put (✓) or (x) :

1-any food chain can be formed of producers only . (   )

2-seabirds eat small fish that swim near the water surface. (   )

3-a desert food chain doesn't contain any type of fish or sharks. (   )

Lesson (3)

Habitat loss

- **Healthy habitats are important to all organisms in food web (G.R)**: because they provide organisms with resources that they need to survive.
- **When these habitats are destroyed, different organisms may not be able to survive.**

❖ **Example of habitat loss in a coral reef system :**

Coral reef:

✓ **Some of the most diverse and valuable ecosystem on earth.**

✓ **they provide food and shelter for large numbers of fish and other marine organisms .**

✓ **They are important for tourism.**

When water is very warm, coral reef will get rid of the algae living in their tissues

it makes coral reefs turn completely into white.

- **The result of coral bleaching:**

✓ **Fish and other marine that depend on coral reef for food and shelter may die.**

✓ **People that depend on coral reefs and for food will be negatively affected.**

Notes:

- **Human activities can affect the ecosystem by :**
- **Building up more buildings.**
- **Throwing waste materials in water.**
- **Overfishing in seas and oceans.**

Plastic pollution:

- Plastic in sea affect marine life, where whales, sea turtles, sea birds and fish can't often differentiate between real food and plastic.
- Sea turtles can't differentiate between a jelly fish and plastic so it eat a lot of plastic and get harmed.
- Coral reefs harmed by feeding on plastic due to the effect of UV rays which break down the plastic into micro plastic which look like the food of coral reef

Worksheet (3)

● Choose the correct answer:

1- Healthy marine environment is important for survival of …….
A) Humans
B) Lions
C) Fish
D) Deers

2- When water temperature increases, algae leave tissues of ………. so they become bleached.
A) Seabirds
B) Coral reefs
C) Clam
D) Sharks

3- Both of sea turtles and ………. Are present in the same marine food chain.
A) Deers
B) Jelly fish
C) Eagles
D) Tigers

4- When coral reefs…………….the seawater, they may ingest micro plastics.
A) Evaporate
B) Filter
C) Cool
D) Warm

● Write the scientific term of each of the following:

1) It is a condition in which coral reefs turn completely into white.
( )

2) Small pieces of plastic in the size of rice grains and they cause harms to marine organisms.
( )

3) It is a process that people can do for plastic waste materials Instead of throwing them in the seas and oceans. (

- **Complete the following sentences using the these words:**

(Toxic – overfishing – shelter – extinction – predator)

1- Healthy natural resources include clean air, healthy food, water and suitable…………………

2- The human activity that directly decreases the marine population is ………………..

3- Habitat loss is not only decrease marine population but also it is one of the main causes of ………………

4- When a sea turtle Eats a jelly fish, this means that the sea turtle is a …………………

- **Give reasons for :**

1- Coral bleaching happens when the water temperature rises.

……………………………………………………………………………………………

……………………………………………………………………………………………

2- Both of rising water temperature and ingesting micro plastic are harmful for coral reefs.

……………………………………………………………………………………………

……………………………………………………………………………………………

………………………………………………………………………………

Lesson (4)

Habitat Restoration

➢ **Habitat Restoration: it is the process of returning a habitat back to its natural state before harm was done.**

✓ **Habitat Restoration projects** try to repair all parts of the habitat.
✓ **Most of habitat restoration projects require a lot of work and take a long time.**

❖**Example :**

Rebuilding coral reefs: (a coral reef rehabilitation project)

✓**scientist collect small parts of different coral species and then move them to a nursery.**

➢**Nursery: is an area in the sea, where scientists take care of small pieces of coral until they grow up.**

➢**Protecting coral reefs from plastic pollution:**

In Egypt, coastal communities near the coral reefs applied a new way of life known as a (zero plastic) where people can:

✓**Replace plastic forks with wooden ones.**

✓**Replace plastic bags with cloth ones.**

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Worksheet (4)

- **Put (✓) or (x) :**

1) Citizens must share in returning a habitat back to its healthy conditions before harm was done ( )
2) Nursery is a natural habitat in the sea, in which coral reefs continue growing and reproducing. ( )

Removing plants negatively affects consumers in an ecosystem . ( )

- **Write the scientific term of each of the following:**

1- It is an area in the sea, where the scientists take care of small pieces of coral until they grow up. ( )

2- A process of returning a habitat back to its natural state before harm was done. ( )

- **Choose the correct answer:**

1- Habitat Restoration projects allow scientists to ……….that occur to an ecosystem.

A) Increase harms.

B) Decrease harms.

C) Keep harms.

D) Increase damage.

2- The place in which we can take care of small pieces of coral until they grow up is known as ……………

A) Food chain

B) Food web

C) Grassland

D) Nursery

3- All the follow processes show coral reefs in healthy conditions, except……………

A) Growing

B) Bleaching

C) Reproducing

D) Filtration

4- Zero plastics projects that is applied in Egyptian coastal communities, means that the using of plastic products decreases by ……….

A) 0%

B) 10 %

C) 90 %

D) 100%

- **Give reasons for :**

It is better to keep natural resources healthy than applying restoration projects.

………

………………………………………………………………………………………………………..

UNIT (2) CONCEPT 2 .1 LESSON.1

MATTER

-Matter:

It is anything that has a mass and takes up space (has a volume)

States of water:

1-Gas state:

Such as: Air- Water vapor(steam)- Carbon dioxide- Oxygen

2-Solid state:

Such as: Ice- Gold- Wood

3- Liquid state:

Such as: Oli- Water- Milk- Vinegar

Note:

- Water can be found in the three state.
- Water can be change from one state to another

Worksheet (1):

Q.1- Write the scientific term of each of the following:

1. it is anything has mass and volume (..............................)

2-The state of water after its boiling (..............................)

Q.2- Choose the correct answer:

1-Matter can be found in..............States.

a.8 b. 2 C.3 d.1

2- The amount of space that a matter takes up is called..........

a. volume b. mass c. area d. weight

3-Both .... and .... have the same state of matter

a. oil-plastic. b. wood-water. c. iron-milk. d. wood-plastic

4-water can be found in a solid state in the form of....................

a. sea water b. steam c. ice d. boiling water

Q.3-what happen if.........?

Water is frozen in the freezer (according to the state of water after freezing.

...

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Lesson (2) Observing Matter

- **Solids:** Have definite (fixed) volume and shape.
- **Liquids:** Have definite volume but they don't have definite shape so, they take the shape of their containers.
- **Gases:** Definite no volume and shape, so they take the volume and shape of their containers.

Note :

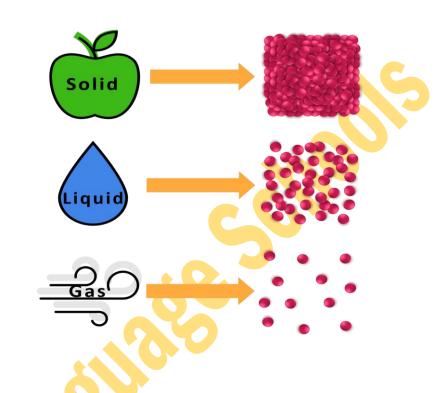
- Some gases cannot be seen such as air but we can see air moving when the wind blows and moves some object
- And we can see a balloon gets larger when you blow air into it

matter is some thing that we can

- Feel (air)
- See (ball)
- Smell (flower)

The particles of all Matter :

- all matter are made up of tiny things (particles) we cannot see with our eyes
- particles of all matter are in continuous motion
- some matter are too small to see with our eyes as air and germs but they also made up of tiny particles

1-Particles of solid matter:

- They are very close to each other (packed tightly).
- They have less energy.
- They move only a little bit.

2-Particles of liquid matter

- They have more spaces.
- They have more energy
- They can move more freely.

3-Particles of gases matter

- They have a lot of spaces.
- They have a lot of energy
- They move very freely

Measuring and observing matter

1. **We can measure the length of some matter using ruler or measuring tape.**
2. **We can measure the mass of matter using a balance (scale.)**
3. **We can measure the temperature of some matter using thermometer**

We can determine the state of matter by

1. **Describing the properties of matter**
2. **The motion of particles of matter**

Note: There are some things that are not matter as light and sound which are forms of energy.

Note: -

- Matter can change from one state to another such as from solid to liquid by melting, from liquid to solid by freezing.
- If there are two objects they cannot take up the same space at the same time

Worksheet (2)

Q.1-Give reasons for:

1- Oxygen has no definite shape or volume.

....

2- Stone has definite shape and volume.

....

3- Vinegar is a liquid matter.

....

Q.2-Put (✔) or (X) and correct the wrong one:

1. All forms of matter have volume.(   )

....

2. Liquids don't take the shape of the container that they are placed in. ( )

....

3 Both oil and wood have definite shape.(   )

....

4.On transferring water from one pot to another,its volume will change.(   )

....

5. Light and sound are forms of matter. (   )

....

Q.3- Choose from column (A) what suits it in column (B):

A	B
1. Gasoline 2. Carbon dioxide 3. Sand	a) Its particles have medium energy. ( ) b) Its particles are packed tightly. ( ) c) Its particles do not at all. ( ) d) Its particles move freely. ( )

Lesson (3)

➢Particles of Matter

You have learned that any matter is made up of tiny particles that we cannot see with our eyes, where :

• Particles are known as "the building units of matter".

• Normal microscopes help us see some particles of matter.

• Different kinds of matter are made of different kinds of particles such as :

- Particles of gold are different from particles of iron.

- Particles of water are different from particles of milk.

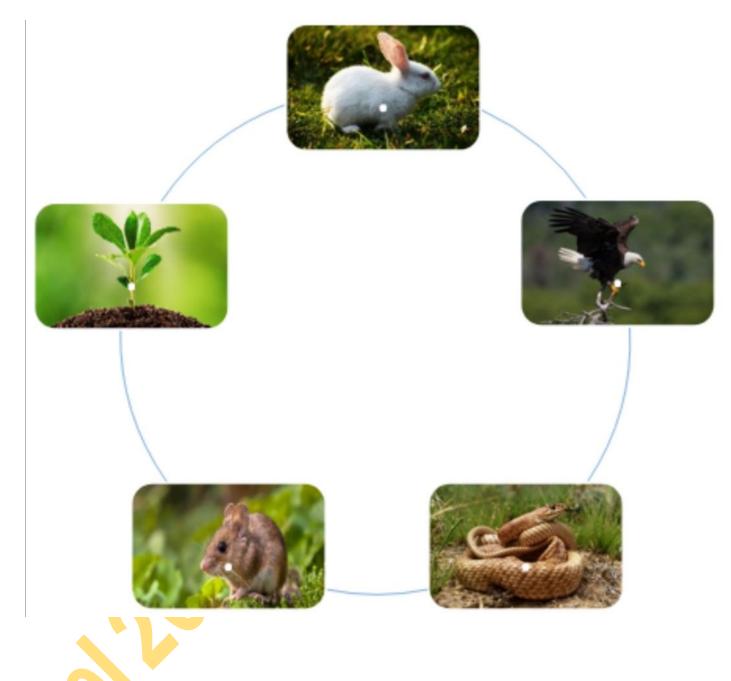
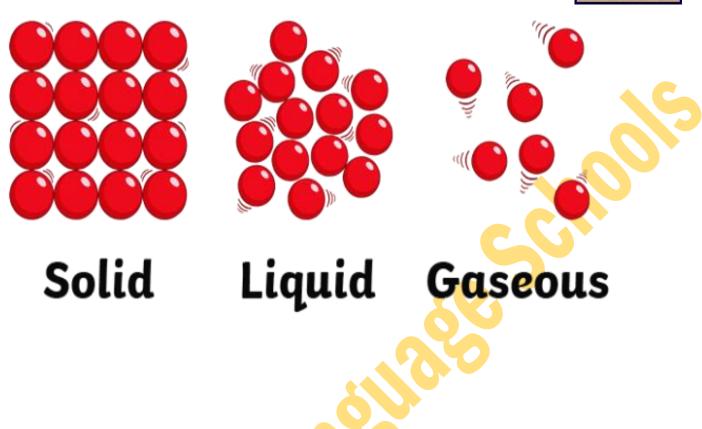
Now, let's study different kinds of particles.

➢ Particles of solids:

Particles of solids are closely packed (arranged) together and this leads to:
- Solids keep their shape.
- When they vibrate or move around their places, these particles are held together, so each particle cannot move separately from one place into another.
-They cannot slide over each other.

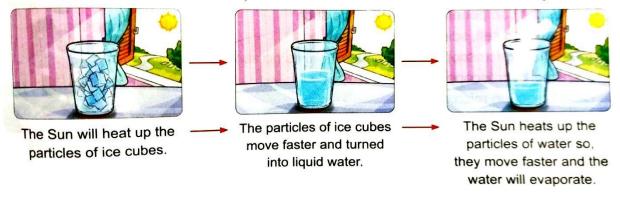
➢ Particles of liquids:

They are held more loosely, than particles of solids, so:
-They move faster than solid particles.
-They can slide over each other so, they take the shape of their containers

.

➢ Particles of gases:

They are not held together, so:

-They move very quickly in all directions.

-they can spread out to fill up any container they put in.

Modeling the particles of matter :

- **Using model is away to some scientific concept than can make ideas more clear.**

Example:

- To make a model of particles that make up a matter, you can use ping pong balls as they are three dimensional units and can be separated from each other.
- You can use these balls to describe the movement of particles of the three states of matter.

Ping pong ball

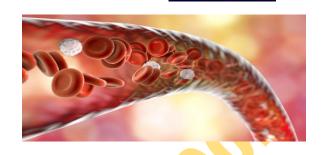
Note:

- When you heat a solid matter ,the movement of its particles becomes faster.

- By heating a liquid matter it changes into gas matter.
- Particles of solid are organized and have a regular pattern.

The size of particles depends on :

1- The type of particles.
2- How particles connect each other.

To see the components of one particles such as

One blood cell, scientist cannot use the regular microscope , but the use special microscope

Called { ***Electron microscope***}

Electron microscope

Note: Size of particles depend on :

1- The type of particles.
2- How particles connect with each other.

How can we show the particles exist ?

We can use gas matter such as air which is made of invisible tiny particles as follow:

When you blow up a balloon	When you squeeze a balloon

- The particles of air inside the balloon move very quickely - The particles of air hit and bounce the balloon frome inside,so they produce a force that inflates the ballon and gives it a round shape. 	- The particles come close together so ,the balloon becomes smaller - If you squeeze more on the ballon,it will pop and the particles of air inside the ballon will escape out into the air .

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Worksheet (3)

Q.1- Complete the following sentences:

1- ……………………..are known as the building units of matter.

2- Particles of …………………….. are held more loosely, than particles of solids.

3- The shape of …………………… do not have definite shape.

4- Matter is something that you can…………………., ………………….. and …………………..

5- Particles of ………………….move very quickly in all directions.

Q.2-What happens if…..?

Solid changes into liquid. (according to the speed of particles)

………

Q.3- Choose the correct answer :

1- By changing the ......of a matter, its state may change.

a. mass b. volume c. Color d.temperature

2. If water is exposed to high temperature,its paricles will move…………,and the water may change into....

a. faster-ice. b. faster-water vapor. c. slower-ice d. slower-water vapor

3- We can use a model to study very large things sucn as

a. solar system. b. germs. c. microbes. d. viruses

4. By blowing up a balloon, ...

a. its volume decreases. b. its color changes. c. its volume increases.

d. its mass doesn't change.

5. To examine the structure of tiny particles of a matter, we can use....

a. ruler. b. balance. c. thermometers. d. microscopes.

Q.4Give reason for:

1- **Some times we need to use an electron microscope.**

……

2- Using model to study some scientific concept.

……

Lesson (4)

Models

Models help us understand things we cannot easily see such as :

• We cannot see the Earth which is too big while we are standing on it. But, we can observe and understand it using the model of globe shown the previous picture.

Model:

It is a copy that is similar to a real thing.

How model help us look at big things?

Example:

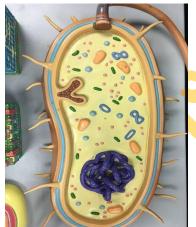
1. The Earth :

A globe represents a model of the Earth which shows us :

- The shape of the Earth
- How much of the Earth is covered with water.
where different countries are located.

2.The solar system :

Solar system is a very big place that consist of many planets such as earth and it help us to

1. **See all planets at once**
2. **Compare between plantes . which one is the biggest and which one is the closest to earth**

How model help us look at small things?

Models can represent very tiny thing in abigger size because It is hard to see them

Germs are very tiny and they are spread around us which make us sick

- A model of a germ helps us to :

- See the shape of a germ without microscope.

- See different parts of germs which help them to know how to spread from one person to another.

Models help us understand how thing work

Example : A model of a volcano:

A model of a volcano shows us :

- The shape of a volcano.

- How the liquid that comes out of a volcano during a real eruption.

Example (2 :A model of an airplane

► From the previous explanation, it is clear that models help us :

- Teach something about the real things they copy.
- See and understand how things work.
- Learn about many things at just the right size.
- Know what we could not otherwise see.

Modeling States of Matter

The arrangement of particles in:

- Solid matter: They have a regular pattern (organized).
- Liquid matter: They have a random arrangement (not well organized).
- Gas matter: They have a random arrangement (not organized at all)

Worksheet (4)

Q.1) Choose the correct answer:

1. The model of the Earth shows how much of its surface is covered with ....

a. gasoline. b. water. c. milk. d. animals.

2. We can see all planets of the........... system including the Earth by using a model.

a. solar b. digestive c. respiratory d. muscular

3. Some liquids come out of a .... during its eruption.

a. star b. wooden piece c. volcano d. plastic piece

4. Particles of .... are organized and have a regular pattern.

a. solids only b. gases only c. solids and liquids d. liquids and gases

5. Gases differ from solids and liquids in that gases.......... .

a. can be poured. b. have a definite shape.

c. fill any container they are put in. d. have a definite volume.

Q.2) Write the scientific term of each of the following :

1- A model of the whole world that is made in the shape of a large ball (………………………………)
2- A copy that is similar to a real thing which we cannot observe with our eyes. (………………………………)

Q.3) Complete the following sentences :

1- Water vapor particles are loosely packed, so that water vapor do not have a definite …………….. or………………
2- We can study the location of countries by using a .... which represents a model of the Earth.
3- Liquids that come out of a volcano have definite .... but they have no definite................ .

Q.4) Give a reason for the following :

➢ Both liquids and gases don't have a definite shape and take the shape of their containers.
……………………………………………………………………………………………………

Q.5) What happens to ... ?

The arrangement of particles of water after its freezing.
……………………………………………………………………………………………………

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Describe and measure matter

How is matter described and measured?

1-By its color , shape ,texture, size.

2-By its state whatever it is solid , liquid ,gas.

1. We can measure some properties of matter using some tools like :

1-Balance to measure it's mass.

2-Ruler to measure the length.

3- Thermometer to measure the temperature.

- a roof for every type of climate

Environment	Material of the roof	Properties of roof material
Desert home	Made of strong stones	-It's flat. -It protects the home from dust and dirt.
Cold weather home	made of ceramic tiles (ceramic bricks)	-It's slanted (inclined). -It protect the home from rains.
Tropical rainforest home	Made of leaves and sticks	-It's slanted. -It protects the home from animals getting inside.

- **Note:**

The type of material used to make a roof depends on the climate where the home is.

Everything around us is made of matter.

Measuring matter: each property of material can be measured by using special measuring tool, like the following table

volume	Length		mass	Temperature
Measuring cup	Measuring tape	ruler	balance	thermometer

You may need to measure more than one property of material to determine if this material is the right one to use.

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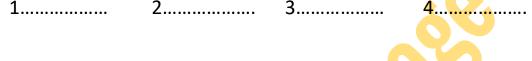

Worksheet (1)

Q.1) Put True or false:

1) The desert home roof made of leaves and sticks. (   )

2) Roofs of buildings protect them from rain, animals, dust, dirt, and other things getting inside. (   )

3) The tropical rainforest home has flatten roof (   )

4)we can describe solid matter by it's color and shape. (   )

Q.2) Choose the correct answer:

1) The roof of desert home is made of …………..

A-ceramic tiles b-strong stones c-leaves and sticks d-ceramic bricks

2) The type of material used to make roof depends on the ………….where the home is located .

a-height b-climate c-location d-roof

3) You can use …….. to measure the mass of the matter .

a-measuring tape b-balance c-ruler d-thermometer

4)You can use a ruler to measure the ………of your book.

a-length b-mass c-temperature d-volume

Q.3)Write the scientific term:

1)A material that is used to build the roof of cold weather homes.(…………………)

2)The property of matter that is measured by measuring cup.(……………..)

3)The property of matter that is measured by the balance.(……………….)

4)The property of matter that is measured by the measuring tape.(……………..)

Q.4) Choose from (A) what suits (B)

Column A	Column B
1-thermometer. 2-ruler 3-balance 4-measuring cup	a-Is used to know the length of a book. b-Is used to know the mass of some apples c-Is used to know the temperature of hot cup of tea. d-Is used to know the volume of amount of water. e-Is used to determine the shape of a book.

1……………… 2………………. 3……………… 4……………….

lesson (2)

The case of the kitchen mystery

Examine 4 different materials like (sugar, salt, flour ,unknown mixture)
🖶Check their texture with your hands , smell their odor ,and examine them with a lens.(you will find the following observations)

1- All substances have the same color.

2-The substances have different odors.

3-The substances are made up of:

a-Large crystals as in sugar.

b-Small crystals as in salt.

c-Very fine particles as in flour.

d-A mixture of large and very fine particles as in unknown mixture.

The unknown mixture is a mixture of sugar and flour.

So :color ,texture ,odor ,shapes are some properties of the matter that are called physical properties.

(Worksheet 2)

Q1 2 Put (true) or (false):

1. Salt and sugar have the same color and odor.()
2. You can use the lens to identify the odor of sugar.()
3. Among physical properties of matter are shape and texture ()
4. We can differentiate between sugar and flour by texture only.()
5. Color of milk is considered as one of its physical properties.()
6. You can differentiate between the components of salt and flour mixture by using your sight sense only.()

b. Complete the following sentences by using the words below :

(odor- smaller - physical - color)

1. The taste of apple is from……………………..properties of apple.
2. Salt and sugar are similar in ....
3. You can identify the………………of a juice by using the sense of smell.
4. The crystals of salt is…………….than that of sugar.

Lesson (3)

Physical properties:

Properties of matter which you can observe them by using your five senses.

-we can use words such as rough ,blue, round and sweet to describe the physical properties

Properties of matter.

First: physical properties are observed with the five senses like:

1-color 2-odor 3-texture 4-shape

Second: chemical properties are observes and measured by the changes that happen in the material when it interacts with the other materials like:

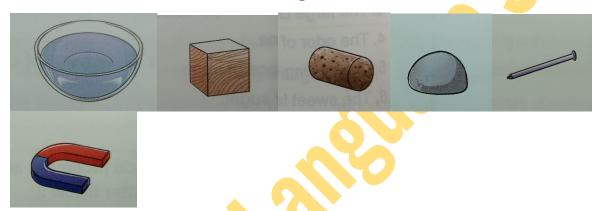
The ability to burn: like the paper interact with fire , the paper becomes ash.

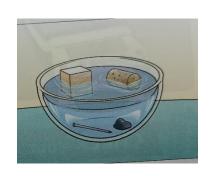
The ability to rust : like the iron nail interacts with water and air , the iron rusts.

Volume	Mass
It's the amount of space the matter takes	It's the measure of the amount of matter
The measuring units of volume are : -liters(L) -Milliliters(mL) -cubic centimeter(cm^3)	The measuring unit of mass are : -gram(gm) -kilogram(kg)
1L= 1000 ml = 1000 cm^3	1kg=1000 gm
A big bottle of water contains 1 liters or more.	A paperclip has a mass of 1 gm

Volume and mass:

1 liter of water has a mass of 1 kg.

Temperature

Temperature:

is a measure of how quickly the particles move in the matter.

1-Quickly moving particles produce more heat energy than slower moving particles.

2-Volume , mass and temperature are properties of matter that you can measure.

measuring properties

use a basin filled with water ,magnet ,balance ,stone ,iron nail ,wood ,cork

1-Hold the magnet near to each substance and see what substance is attracted to the magnet .

2-Measure the mass of each substance by the balance .

3-Put all substances in the basin of water and see which will float and which will sink.

1-Some substances are attracted to the magnet and some doesn't.

2-Floating and sinking doesn't depend on the mass of the matter.

Does the shape and size affect the mass of a material

- **Changing the shape of the material doesn't affect its mass.**
- **If you cut an apple in two halves and measure the mass of one half , the mass would be half the mass of the original apple.**

measuring matter

In front of you 3 materials, see the data of each one then compare between them:

1 Is biggest in mass but not the largest in volume.

2 have the largest volume but not the biggest mass.

3 is the longest one

(Worksheet 3)

Q1

A) Choose the correct answer:

1-all of the following are physical properties of matter except………

(a-color b-rusting c-texture d-shape)

2-the physical property of milk that you can see is the ……….of it .

(a-odor b-texture c-color d-taste)

3-burning of wood is considered as …………..of matter.

a- physical property b-chemical property

c- physical and chemical properties d-neither physical or chemical properties

4-the volume of one liter of water has a mass of ……….

(a- 1 gm b-1 kg c- 1 mL d-1cm^3)

B) true or false:

1- Salt and sugar have the same color and odor.( )

2-we can differentiate between sugar and flour by texture only. ( )

3-shape is one of chemical properties of matter.( )

4-all physical properties of matter can be measured.( )

C) Write the scientific term of each of the following :

1-it's the measure of the amount of matter (……………………..)

2-it's the amount of space taken by the matter (…………………..)

3-it's the measure of how quickly the particles in a matter are moving (……………….)

4-the properties of matter that you can observe them by using your five senses (…………….)

D) complete the following by using the words below:

(physical - odor -rough)

1-Both odor and texture of matter are considered from the ……….properties of matter.

2-You can know the …………of a juice by using the sense of smell.

3-We can describe the texture of sugar crystals by saying" it has ………..crystal texture"

q2

A)choose the correct answer:

1-the mass of an orange will change if we its ………

(a- size only b-size and shape c-shape only d-color and shape)

2-if we cut a tomato into 2 halves , the …………of one half of tomato will decrease to half.

(a-color b-mass c-temperature d-shape)

3-1kg of tomato will differ from 1kg of wood in the ………

(a-volume b-volume and mass c-mass d-color and mass)

4-which of the following matter floats on the surface of water?

(a-iron spoon b-stone c-iron nail d-cork)

B)true or false:

1-iron spoon is attracted to the magnet.(   )

2-if we put a wood cube in water it will float.(   )

3-iron nail is attracted to the magnet and floats on the surface of water.(

4-if we cut an apple into 4 pieces , the mass of each piece is less than the whole apple( )

LESSON (4)

Useful Properties of Matter

- Look at the following picture, then put (√) or (×)

1. Cooking pans are made up of copper. ( )
2. . Handles of cooking pans are made up of wood or plastic . ( )

- In this activity we will learn about the useful properties of some materials .

Helium

Properties of helium

Physical properties	Chemical properties
It is a light gas which means it is lighter than air.	It is not poisonous. It is not flammable (A flammable material means that this material burns and form fire).

Uses of helium

It is used to fill balloons

It is used to fill blimps

Give reason for :

Balloons and blimps filled with helium always rise up in the air.
Because the helium is lighter than air.

Copper

physical properties

- It can be stretched into thin, flexible wires.
- It Conducts electricity well (good conductor of electricity).
- It conducts heat well (good conductor of heat).

Uses of copper

It is used in making electrical wires	It is used in making cooking pans

Give reason for:

Electric wires are made up of copper.
Because copper is a good conductor of electricity and can be stretched into a thin, flexible wire.

Note
Wood and plastic are bad conductors of heat so, they can be used in making handles of cooking pans.

Check your understanding

- Look at the following figures, then answer the questions

Copper handle

Figure (a)

Wooden handle

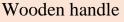



Figure (b)

1. In which figure the hand will feel heat. (Figure (a) - Figure (b)

The cooking pan is made up of………… (wood - copper)

Uses of Matter

- You have learned a lot about the properties of a materials now, we will learn about some uses of some other matter.
- The following table shows some uses of some matter and its properties.

Types of Matter	Uses (purpose)	Property
Steel	Screwdrivers Hammers	• Hard • Strong
Glass	Windows Eyeglasses	• Transparent • Smooth
Rubber	Gloves Tires	• Water proof • Flexible

	Athletic shoes	

Check your understanding

- Complete the following sentences :

1. Among the properties of rubber are water proof and…………….
2. . Hammers are made up of...................

Worksheet 4

1 (A) Choose the correct answer:

1. The used materials in making cooking pans are…………….

a. copper and glass
C. glass and helium.
b. copper and helium.
d. copper and wood

2. Both………. are sinking in water and attracted to the magnet.

a. stone and iron nail
b. paper clip and iron nail
C. paper clip and wood spoon
d. plastic ruler and wood spoon

3. 1kilogram of iron = 1 kilogram of cotton This sentence means that both materials are equal in…………….

a. mass only
b. volume only
C. volume and mass
d. mass and temperature.

(B) Give a reason for the following :

Glass is used in making eyeglasses.

………………………………………………………………………………......

Part 1

2 (A) Cross out the odd word:

1. Shape - Mass - Rusting - Color.
2. Kilogram - Liter - Cubic centimeter – Milliliter
3. Piece of wood - Iron nail - Piece of cork - Piece of stone

(B) What happens if…..

You put a piece of cork in a beaker filled with water.

……………………………………………………………

3 Look at the following pictures, then complete the following sentences;

Tool (A) Tool (B) Tool (C)

1. Tool (…………...) is made of steel,

because it is……….And……….

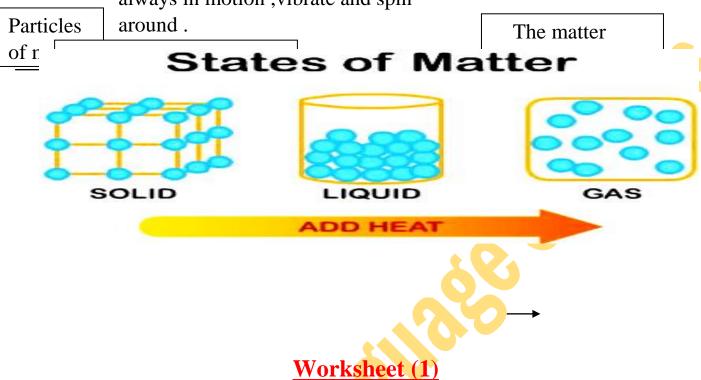
2. Tool (…………...) is made of rubber, because it is……….And……...
3. Tool (…………...) is made of glass, because it is……….And……...

Concept (2.3) L.1 States of matter

States of matter are: solid , liquid and gas.

-Matter can be changed from state to another by cooling or heating but the mass (amount) and number of particles don't change .

- Water exists in three states: ice (solid state) ,water (liquid state) and water vapour (gas state).

- When you leave piece of chocolate in sun or cube of ice in a hot place

they will melt and change from solid state to liquid state.

Melting : Process in which the matter is changed from solid to liquid state when its temperature increases by heating.

- We use Thermal energy (heat energy) in cooking food and warming homes.

- Any matter consists of very small particles, these particles are always in motion ,vibrate and spin around .

Particles of r

The matter

Worksheet (1)

Q.1) Choose the correct answer:

1-Ice turns into water by............

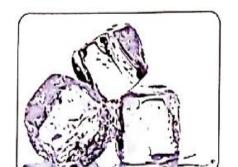
a- cooling b-freezing c-rusting d-heating

2-Which of the following matter takes the shape and the volume of container?

a-water. b-juice. c-ice. d-water vapour

3-All the following happen to the particles of oil when it is cooled ,except that they.........

a-move slower b-move faster c-vibrate less d-come close together.

Q.2) Put (√)or (x):

1-The mass of an amount of apple juice will change if we mix it with water. ( )

2-Particles of solid matter are spread out from each other. ( )

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Q.3) Write scientific term:

1-The state of matter in which matter takes the volume and the of its container. ( )

2-It is a process by which a matter is changed from solid to liquid state. ( )

Q.4)Complete the following :

1-Iron is a ....state of matter that has definite ....and........

2-The distance between particles of solid matter is very ....

Q.5) Give reason for :

1-Ice is turned into water when it is placed in a warm room.

…………………………………………………………………………………

2-Air doesn't have definite shape and volume.

……………………………………………………………………………………………
…………………………………………………………………………………

Q.6) What happens if:

1-.we cool some of tomatoes. (According to their masses)

……………………………………………………………………………………

2- We heat an amount of water. (according to the motion of particles)

……………………………………………………………………………………

Q.7) Look at the following pictures ,then complete the following sentences:

Lesson (2) Changing states of matter

Lesson 2 temperature and state of matter

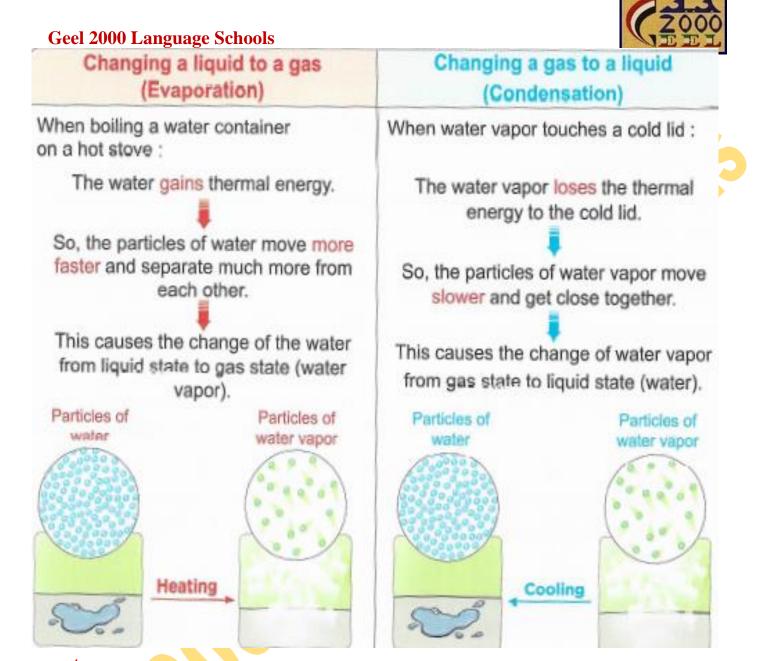
Heated up (gain, taking heat)

Cooled(losing, releasing) energy

Temperature and state of matter:

Melting	Freezing
▶ In this process, the particles of a solid matter gain energy.	▶ In this process, the particles of liquid matter release energy.
▶ This causes particles to move around more and their temperature increases.	▶ This causes particles to move slower and their temperature decreases.
▶ So, the matter changes to liquid state.	▶ So, matter changes to solid state.
▶ For example :	▶ For example :
• When the temperature of solid ice increases above 0°C, its particles gain energy and they move around more, so the ice changes to liquid water.	• When the temperature of liquid water decreases below 0°C, its particles release energy and they move slower, so liquid water changes to solid ice.
Melting →	Freezing →

-When melting chocolate it's taste, color and smell don't change . (example on physical change)

Physical change: it is a change in matter without any change in its structure(make up).

- When the temperature of ice increases above 0° C it changes into liquid water.
- 0° C is called freezing point of water.

- º C is the measuring unit of temperature.

Matter changing states

Changing a solid to a liquid (Melting)	Changing a liquid to a solid (Freezing)
When placing a container of ice cubes on a hot stove :	When placing a water container in a freezer :
The ice **gains** thermal energy.	The water **loses** the thermal energy to the space in the freezer.
↓	↓
So, the particles of ice move **faster** and separate from each other.	So, the particles of water move **slower** and get close together.
↓	↓
This causes the change of the ice from solid state to liquid state (water).	This causes the change of the water from liquid state to solid state (ice).
Particles of ice → Heating → Particles of water	Particles of ice ← Cooling ← Particles of water

note

water vapour differs from steam where:

when water boils it produce water vapour which is invisible in the air

when the water vapour hits cooler air it condense into tiny water droplets forming a visible small white cloud known as steam

Worksheet (2)

Q.1 Choose the correct answer:

1-freezing of liquid chocolate needs……..temperature.

a)high b)low c)warm d)very high

2-The reversible changes of matter are usually ....

a) physical changes only.

b)chemical changes only .

c)both physical and chemical changes.

d)neither chemical or physical changes.

3)Ice is turned into ....when its temperature is between 0° C and 100 °C.

a)solid state b)liquid state c)gas state d)water state

Q.2) Write the scientific term:

1) They are changes in matter which are usually reversible and don't affect its structure. (   )

2) It is the process by which the particles of matter gain energy and changes from solid to liquid state. (   )

Q.3) Complete the following by using the words below:

(Freezing-increase -water-temperature-decrease-particles -melting)

1. When a chocolate cube is exposed to sun rays, its temperature will..........and it will become liquid.

2. Matter can be changed from one state to another by changing its ....

3. When we put a bottle containing water in freezer its temperature will ....

and becomes solid.

4. Solid state is turned into liquid state by..........process.

5. Liquid state is turned into solid state by.........proCess.

6. By changing the temperature of matter, its.........Speed will change.

7.0°C is the freezing point of ....

Q.4) Give reason for :

-Both melting and freezing processes are considered as physical changes.

……

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Difference between mixture and compound

Mixture	Compound
It is a matter formed of two or more materials . These materials don't combine chemically and mixing them doesn't change them into new substance. Examples: Salty water,atmosphere ,some types of food salads.	It is a matter formed of two or more materials . These materials combine chemically to form a new substance. Examples: Table salt

- Mixtures can be made of:

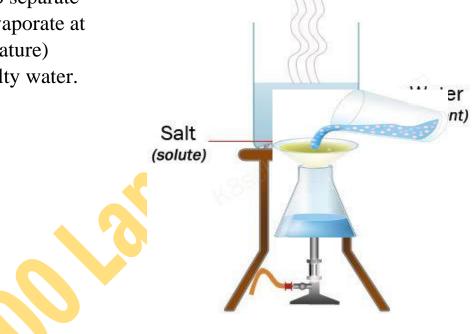
1-solid materials: Sand and rocks .

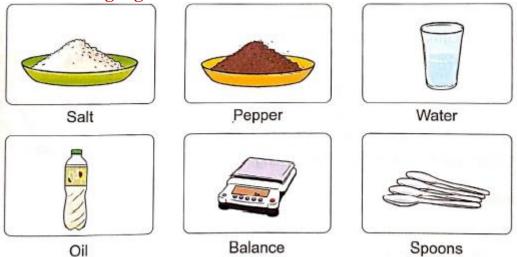
2-solid and liquid materials: Salty water.

3- gaseous materials: Air.

- Properties of mixture:

1- It consists of one or more materials ,these materials don't combine chemically.
2- The components can be separated after mixing them.
3- Each material keeps its properties .
4- It consists of one or more materials ,these materials don't combine chemically.
5- The components can be separated after mixing them.
6- Each material keeps its properties .

- **Separating of mixtures**

1- **Filtration** (if one material in the mixture has smaller particles than the other material)

Ex: separating sand from mixture of sand and water.

2- **Evaporation** (to separate materials that evaporate at different temperature)

Ex: salt from salty water.

mixing it up with mass

Using the following tools:

1-Weigh 10 gm of salt and 10 gm of pepper with the balance.

2-mix it together, the compare between the sum of their masses before and after mixing.

- **The sum of their masses before and after mixing is equal.**
- **The properties of the substance doesn't change after mixing.**

3-weigh 10gm of water and 10 gm of oil with the balance.

4-Mix the water and oil then compare between their masses before and after.

- The sum of their masses before and after mixing is equal .
- The properties of the substances doesn't change .

5- Weigh 10gm of salt and 10 gm of water .

6-Mix them and weigh the masses and compare them before and after mixing.

❖ The sum of their masses before and after is equal.
❖ The properties of the substances doesn't change.

So :the masses of substances before and after are equal of these substances after mixing and their properties don't change(forming mixture)

Experiment 2

Using the following tools :

1-weigh 10gm od vinegar and 10gm of baking soda

2-mix them together ,then weigh the mixture before and after mixing

❖ The sum of their masses before and after mixing is equal.

- A gas is formed causing bubbles ,so the properties has changed after mixing.

3-weigh 10gm of cornstarch and 10gm of iodine .

4-mix them together ,then weigh there masses before and after mixing.

- The sum of their masses before and after mixing is equal .
- A compound formed and it's color is dark blue ,so the properties has changed after mixing.

So: the masses of substances before and after mixing is equal but the properties has changed (when forming compound).

Worksheet (3)

Q.1) a

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a. Choose the correct answer:

1- physical process which need heating include…..

a- Melting and freezing b- melting and condensation
c- melting and evaporation d- freezing and evaporation

2-when you boil water ,it will…………

a- Condense b- evaporated c- melt d- freeze

3-To separate sand only from salty water ,we can use ……..process.

a- Filtration b-evaporation c-freezing d- condensation

B. Choose from column(B) what suits it in column (A)

A	B
1- Condensation 2- Melting 3- Freezing 4- Evaporation	a- Is the change from solid state to liquid state. b- Is the change from gas state to solid state c- Is the change from gas state to liquid state. d- Is the change from liquid state to gas state. e- Is the change from liquid state to solid state.

1…………… 2…………….. 3…………….. 4……………

C. Give reason for:

1- Fruit salad and salty water are considered as mixtures.

………………………………………………………………………

Q2 A) Choose the correct answer:

1-by adding baking soda to vinegar , a …………is formed .

a-powder b-compound c-mixture d-solid matter

2- The………………. of iodine will not change after mixing it with starch.

a-mass b-color c-color and mass d-properties and mass

3-by adding iodine to starch, the color of the formed compound will change into……….

a-dark green b-dark blue c- red d-yellow

4-we mixed 150gm of banana with 50gm of apple , the mass of banana only will be ……….gm after mixing.

a-50 b-100 c-150 d-200

B) Correct the underlined words:

1-the properties oil will change when mixing it with vinegar. (…………….)

2-by adding iodine to starch, their masses will change. (…………….)

3-by mixing some vegetables together their properties will change. (…………)

4-the mass of 50 gm of sugar will decrease by adding 100 gm water to it.

C) Complete the following using the words below:

(The same -mixture -mass -compounds -color -properties -changed)

1-the mass of mixed substance will not be changed during formation of …………..,but their properties will be changed.

2-the mass of salt in salty water will be ………..after the mixture is formed.

3-by adding iodine to starch ,their ………..will change into dark blue forming a new compound.

4-by mixing salt with pepper, a………is formed which has no change in the ……and……….of its components.

5-by adding baking soda to vinegar, the properties of the formed substance will be …………….

LESSON (4)

PHYSICAL CHANGES IN OUR LIVES

Physical change is a change in the shape of matter without any change in its structure.

Physical changes don't form (new substances) but they can change size, shape or state of matter.

Examples of changes in our lives

Physical changes :

1. Cutting paper

2. Making salad

3. Melting wax

Chemical changes :

It is a change in the structure of matter producing a new matter.

1. **Burning a paper forming ash.**
   When oxygen react with carbon and hydrogen
   They release heat that can start a fire

2. **Making bread.**

3. **Iron rust when metals react with oxygen and water forming iron oxide which is a layer with reddish color**

4. **Mixing vinegar with baking soda they forming gas bubbles**
5. **Digestion of food inside our body takes blace as a result of some chemical changes**

Changes of matter

➢**Physical changes:** **it is the change in the shape of the matter.**

-Change in size:

-Cutting a paper **-Cutting fruit.**

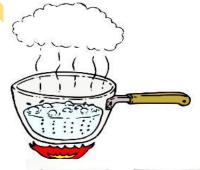
-Change in shape:

-Coiling a straight piece of wire to form a spring.

-The flow of sand in an hourglass changes the shape of sand in the container.

-Expected change in color

-Adding drops of food colors to a cup of water.

- Coloring a paper

-Melting a butter or ice.

-E evaporation of water.

- Boiling of water

- Condensation of water.

➢ Chemical changes:

It is the change in the structure of the matter producing a new matter.

Examples:

-Unexpected color change

-When mixing iodine with cornstarch,

a new substance is formed and

its color is dark blue.

-Burning a piece of paper.

-Formation of gas bubbles.

-When mixing baking soda with vinegar,

gas bubbles appear.

-Formation of bad odor

-Living a cup of milk out of the fridge for about two days can produce a bad smell (due to the chemical change happens to milk.

- Making yoghurt from milk.

Q1

- **A. Choose the correct answer:**

1. Components of …………… mixture can react together.

   A) Vinegar and baking soda **B) Salt and**

   C) water **D)Salt and pepper**

2- from the changes which don't form a new substance is

A) Burning of pepper **B) Cutting of wood** **C) Baking bread**

3- during burning of wood, …….. energies are produced.

A) Electrical and light **B) Thermal and light** **C) Thermal and electrical**

4- evaporation process is a ………. Change of matter , which can be used to separate……. Components.

A) Physical – mixture **B) Physical – compound** **C)Chemical – mixture**

- **B. Complete the following sentences:**

1-Cutting a paper into pieces is considered as a …………………… Change, while burning it is considered as a …………. change.

2-Making salad doesn't produce ……………. substance.

3-Melting of wax is a ………… Change, while burning of wood is a …………….

- **C. Correct the underlined words :**

1-You can separate oil from water by filtration process. (……………………)

2-Melting of wax is chemical change. (……………………)

3-Cutting a piece of cloth is considered as a physical change because it produces a new substance. (………………………)

4-When you strike a match, light energy and electrical energy are produced. (………………………)

- **Explain the following sentences:**

1- The components of mixture don't produce a new substance when combining together.

…………………………………………………………………………………………………

2-Air is considered as a mixture.

…………………………………………………………………………………………

Q2 1- Explain:

Formation of dark color which is formed when mixing iodine with cornstarch.

………

……

2- Correct the underline word:

1-Melting of a piece of chocolate is a chemical change.(………………………)

2- When vinegar combines with baking soda, they form rust. (……………………)

3-The bad odor of the milk is a physical change.(…………………………)

3-Complete the following sentences:

1-Making yoghurt from milk is a ………….change.

2-The change in the structure of the original matter producing a new matter is known as ……… change.

3-Cutting a fruit is a ……. change.

4-Mixing baking soda with vinegar is a ……. change.

4- Give reason for:

1- Formation of a layer with reddish color on the surface of wet iron.

…………………………………………………………………………………………………

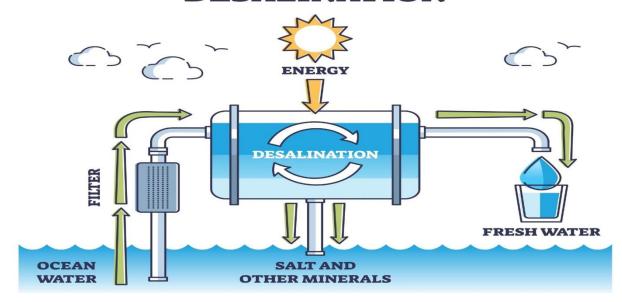
2- Formation of a bad odor when milk is left out of the fridge for several days.

…………………………………………………………………………………………………

Lesson (5)

Water

-Fresh water is about 70% of the surface of the earth which is covered by oceans.

-The water of the seas and oceans **is a mixture** ... **ls, gases, living organisms and dead organisms.**

So this water is not suitable for drinking

Desalination:

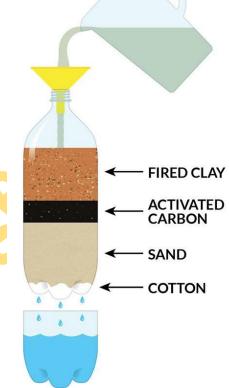
It is the process of removing salt from water.

➢ The components of mixtures can be separated by the following processes:

1-Filtration:

It removes any large materials such as seaweed, shells and fish.

▸Water, salts, minerals and gases would pass through filters that makes water still undrinkable.

2- Evaporation:

When boiling the filtered water, water vapor rises up leaving salts and other minerals.

▸When cooling the water vapor, it is turned into liquid water and it is safe to drink it.

Filtration and evaporation are used to Separate fresh drinkable water from the water of seas and oceans

➢Problems of desalination (disadvantages).

- It needs a big amount of energy.
- It is very expensive process.
- Small marine organisms can be hurt, due to sucking of water into the desalination plants.

▸ the water that contain a very big amount of salt that is pumped back to oceans after desalination , can be dangerous to the marine life

Note:

1. drinking salt water makes human body dehydrate faster which means that the human body loses water faster.
2. Egypt has over 80 desalination plants

Worksheet (5)

1-Choose the correct answer:

1-People cannot drink the water of oceans and seas because it is a mixture of water and.....

a. salt only. b. minerals only.

C. living organisms only. d. salt, minerals and living organisms.

2-Desalination process means that we remove...... from water to drink it.

a. sugar b. salt C. Oxygen gas d. hydrogen gas

3- .... process is used to separate salt and minerals from seawater.

a-rusting b-salt c-shells d-seaweed

2-Give a reason for the following:

We cannot drink the water of oceans and seas.

....

....

3-What is the definition of......?

-Desalination

……………………………………………………………………………………………………

……

…

Model answers

Unit (1)

Concept (1.1)

Worksheet (1)

1-Choose

1-d 2-a 3-b 4-a 5-b

2-write the scientific term

1-Carbon dioxide. 2-water.

3-photo synthesis. 4-oxygen.

3-Cross out the odd word

1- Oxygen gas. 2-sunlight.

4- Choose from column (B) what suits it in column (a):

1-b 2-c 3-a 4-d

Worksheet (2)

1-a

A-Germination

B-soil

2-1 Figure (A). Figure (B)

2-Soil.

Worksheet (3)

Q1: Write the odd word

1. Eyes 2. Vegetables 3. Oxygen

Q2: put true or false

1. √
2. X

3. *X*
4. *√*
5. *X*
6. *X*
7. *√*
8. *√*

Q3: write the scientific term

1. Photosynthesis process   2. Sunlight   3. Leaves   4. Stomata   5.Stomata
6. Xylem

Q4: Write the definition of

1. ***Photosynthesis process: It is the process through which plants use the energy in sunlight to make their own food***
2. ***Stomata: They are tiny openings that allow air to move into the leaves***
3. ***Xylem : it's a vessels that Transfer water and nutrient from roots to other plant's part***

Q5: 1. Complete the following

1. Leaves   2. Flower   3. Stem   4.fruit   5. Roots

Worksheet (4)

Q1 Complete

1. Oxygen   2. Sunlight, co_2, water and mineral salt

3. Xylem   4. Light or solar

5. It absorbs water and mineral salts from the soil

6. Upright stem   7. Tubers

8. Narrow leaves

Q2 Put (true) or (false)

1. √ *2. x* *3. √*

4. x *5. √* *6.√* *7. √*

Worksheet (5)

1-Complete the following sentences:

1. Glucose
2. The leaves - the nose-the mouth
3. The heart - blood vessels.
4. Glucose - the body cells.
5. Circulatory
6. Leaves
7. Xylem - phloem.
8. heart- xylem - roots
9. light-chemical
10. Seeds - reproduce.
11. Arteries - veins.

2- Give reasons for

1. Because flowers produce seeds for the plant that help the plant to reproduce.
2. Because it transports blood and other fluids through the body.
3. Because xylem carry water and nutrients from the roots to the leaves.

Concept (1.2)

Worksheet (1)

Q1 Write the scientific term of each of the following

1. Ecosystem.
2. Photosynthesis.
3. Light energy.
4. The Sun.
5. Plant
6. Glucose.
7. Carbon dioxide gas.
8. Oxygen gas.
9. Plants.

Q2 Give reasons for:

1. To get his needed energy and to do his activities

Worksheet (2)

Q.1 Complete

1. Producers
2. Glucose - photosynthesis
3. Consumers
4. Plants
5. Decomposers
6. Primary
7. Recycling

Q2 what happen if

1. The secondary consumers will move away to another ecosystem to search for food or they will die.
2. Dead organisms will not be decomposed, and their nutrients will not return back to the soil.

Worksheet (3)

Choose

1. d
2. c
3. b
4. c
5. b
6. c

Lesson (4)

Q1.Complete the following sentences using the words below:

1. Food 2.food web 3.primary consumers

Q2.study the opposite food web, then choose the correct answer

1. b 2.d 3.c 4.d 5.b

Q3.study the following (the sun)

Lesson (5)

Q1.Put (√) or (x)

1. (√) 2. (√) 3. (x) 4. (x)
5. (√) 6. (x) 7. (√) 8. (√)
9. (X)

Q2.Write the scientific term of each of the following:

1. Decomposition process.
2. Scavengers.
3. Decomposers.
4. Recycling process.

Q3. Give reason :

-to break them down into small pieces .

Lesson (6)

Q1Choose

1. b 2.d 3. d 4. d 5.a

Q2 put (√) or (x)

1. (√) 2. (x) 3. (√) 4. (x) 5. (x)

Q3.Write the scientific term of each of the following

1. Ecologist.

2. Plants.

3. Prairie.

Concept (1.3)

Lesson (1)

➢ **Choose the correct answer:**

1- B 2- A 3- C 4-B 5-D

➢ **Put (✓) or (x) :**

1-(x)

2- (x)

3- (✓)

➢ **What happens if..?**

2) They will pollute water and the marine organisms will be negatively affected.

3) The water of lake decreases due to its evaporation.

Lesson (2)

➢ **Write the scientific term for each of the following:**

1) Tertiary consumer

2) Decomposers

➢ **Complete the following sentences:**

1) Prey

2) Energy

➢ **Put (✓) or (x) and correct the answer:**

1) (X) remain constant
2) (✓)
3) (X) The plant produces energy that decomposers use to make their food.

➢ **Choose the correct answer :**

1) D 2)b 3)d

Lesson (3)

➢ **Give reasons for:**

1-Because by increasing the water temperature microorganisms will move to another cold water so the small fish will move also and the sea birds will die.

➢ **Write the scientific term of each of the following:**

2) Microorganisms
3) Population

➢ **put (✓) or (x) :**

1-(X) 2-(✓) 3-(✓)

Lesson (4)

- **Choose the correct answer:**

1- C 2-**B** **3-B** **4-B**

- Write the scientific term of each of the following:

1- Coral bleaching
2- Micro plastic
3- Recycling

- **Complete the following sentences using these words:**

1- Shelter
2- Overfishing
3- Extinction
4- Predator

- **Give reasons for:**

1- Because when the water temperature rises the coral reefs get rid of algae from their tissues.

2- Because rising of water Cause coral bleaching, and micro plastics are toxic and sharp.

Lesson (5)

- **Put (✓) or (x) :**

1- (✓)
2- (✓)
3- (X)

- **Choose the correct answer:**

2- C **2-A** **3-D**

Lesson (6)

- **Put (✓) or (x) :**

1- (✓)
2- (X)
3- (✓)

- **Write the scientific term of each of the following:**

1- Nursery
2- Habitat Restoration

- **Choose the correct answer:**

1- B
2- D
3- B
4- D

- **Give reasons for :**

Because restoration Projects take a lot of money and a long time.

MODEL ANSWERS

CONCEPT 2.1

Worksheet (1)

1-Write the scientific term of each of the following

1-matter

2- Gas

2- Choose the correct answer:

1-c

2-a

3-d

4-c

3-What happen if………?

-It becomes a solid.

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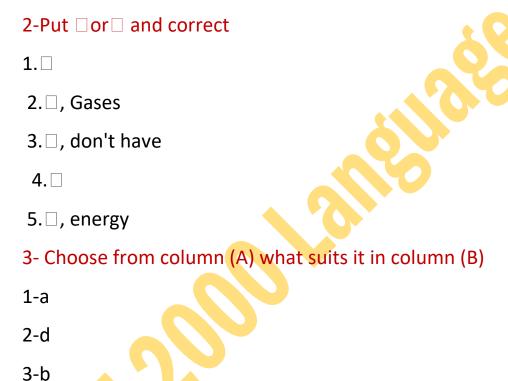
Worksheet 2

1-Give reasons for:

1. Because it is a gas
2. Because it is a solid
3. Because it has definite shape and volume.

2-Put □or□ and correct

1. □
2. □, Gases
3. □, don't have
4. □
5. □, energy

3- Choose from column (A) what suits it in column (B)

1-a

2-d

3-b

Worksheet 3

1- Complete the following sentences:

1- Particles
2- Liquids
3- Liquids

4- See – Feel- Smell
5- Gases

2-What happens if…..? It will increase.

3.Choose the correct answer :

1. (b) volume
2. (b) faster-water vapor
3. (a) solar system
4. (d) microscope

4.Give reason for :

1- To see the components of particles .
2- Because it can make ideas more clear .

Worksheet 4

Choose the correct answer :

1. (b) water
2. (a) solar
3. (c) volcano
4. (a) solid
5. (c) fill any container they are put in.

Write the scientific term of each of the following :

1- Globe
2- Model

Complete the following sentences:

1- Shape or volume
2- globe
3- Volume - shape

Give reason for :

Because their particles are arranged randomly

What happen to…..?

- it will be organized

MODEL ANSWER

CONCEPT 2.2

Worksheet 1

A) 1-false 2-true 3-false 4-true

B) 1-b 2-c d-b d-a

C) 1-ceramic 2-length 3-mass 4-length

D) 1-c 2-a 3-b 4-d

Worksheet 2

Q1

1. false 2. False 3. True 4 true 5. True 6 false

q2

1. physical 2. Color 3. Odor 4. Smaller

Worksheet 3

Q1 A) 1-b 2- c 3-b 4-b

B) 1-false 2- false 3- false 4-true

C) 1-mass 2-volume 3-burning 4-physical

D) 1-physical 2-odor 3-rough

Q2 A)1-a 2-b 3-a 4-d

B)1-true 2-true 3-false 4-true

Worksheet 4

1 (A)1.d 2.b 3.a

(B) Because glass is transparent

2 (A) 1. Rusting (all items are physical properties of matter while rusting is a chemical property of matter).

3. Kilogram (all items are measuring units of volume, while kilogram is a measuring unit of mass).

4. Iron nail (all items are not attracted to the magnet, while iron nail is attracted to the magnet).

(B) The piece of cork will float on the surface of water.

3 1. B – hard – strong.

2. C - waterproof - flexible. 3.A - transparent - smooth.

MODEL ANSWERS

CONCEPT 2.3

Worksheet 1

Q.1) Choose:

d-heating c-ice. b-move faster

Q.2) put (√)or (x):

1- x 2-x

Q.3)Write scientific term:

1- Gas state . 2 – Melting process.

Q.4)Complete

1-solid – shape –volume.

2- close together.

Q.5) Give reason:

1- Because the temperature increases so it will melt and becomes liquid .

2-Becsuse air is considered as a gas state of matter.

Q.6)What happens if:

1- It doesn't change
2- The particles of water will move faster.

Q.7)Look at the following pictures

1- Picture 1, because it has definite shape and volume.

2- Picture 3, it has definite volume but doesn't have definite shape.

3- picture 2, it doesn't have definite shape and volume.

4- 1_3

Worksheet 2

Q.1) Choose:

1- b) low 2- a) physical changes only 3- b) liquid state

Q.2)Write the scientific term:

1- Physical changes. 2- Melting process

Q.3) Complete:

1- increase. 2- temperature 3- decrease 4- melting

5- Freezing 6- particles 7- water

Q.4) Give reason:

Because in these processes the matter changes without any change in its structure.

Worksheet 3

Q.1) A. Choose

1 –c 2-b 3-b

B.

1- c 2-a 3-e 4-d

C.

Because they are formed of two or more materials

Q.2) A)1-b 2-a 3-b 4-c

B)1-baking soda 2-properites

3-willnot 4-remain constant(still the same)

C)1-compounds 2-the same 3-color 4-mixture -mass-properties 5-changed

Worksheet 4

q1 .1. Choose the correct answer:

1- A
2- B
3- B
4- A

2. Complete the following sentences:

1) Physical – chemical
2) New
3) Physical – chemical

3. Correct the underlined words :

1- Sand
2- Physical change
3- Doesn't produce

4- Heat

4. Explain the following sentences:

1- Because the components of mixture are physically combined together that means they don't react together .

Because it consists of a mixture of some gases.

Q2

1- Explain:

Because of the chemical change that happens to the cornstarch after mixing it with iodine.

2- Correct the underline word:

1- physical

2-gas bubbles

3-chemical

3-Complete the following sentences:

1- chemical

2- chemical

3- physical

4-Chemical

Worksheet 5

1-Choose the correct answer:

1-d

2-b

3-a

2-Give a reason for the following:

Because it's a mixture of water, salt , other minerals, gases, living organisms and dead organisms.

3-what is the definition of...?

Desalination:

It is the process of removing salt from water.